



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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JUN 25 2002

OFFICE OF
AIR AND RADIATION

Raymond Terza
General Manager
United States Steel Corporation
Clairton Works
400 State Street
Clairton, PA 15025-1855

Re: Petition for Alternative Substitute Data for USS Clairton Works

Dear Mr. Terza:

This is in response to your May 3, 2002 petition under § 75.66 (a) in which United States Steel Corporation ("USS") requested approval of alternative substitute data values for the fuel gross calorific value (GCV) and the oxygen-based F-factor (F_d), for periods when the on-line gas chromatograph is inoperable. EPA approves the petition, subject to the conditions discussed below.

Background

Boilers 1 and 2 at the USS Clairton Works in Clairton, Pennsylvania are affected units under the NO_x Budget Trading Program, under 25 Pa. Code Chapter 145. The boilers combust a mixture of fuels, consisting principally of coke oven gas, which is supplemented at times with natural gas or jet gas (which is comprised of 2/3 natural gas, and 1/3 air).

In the May 3, 2002 petition, USS stated that for the unique mixture of fuels combusted in Boilers 1 and 2, the missing data value for GCV specified in Table D-6 of Appendix D to 40 CFR Part 75 is inappropriately high. According to Table D-6, the substitute GCV value for gaseous fuels other than natural gas is 2100 Btu/scf.

To characterize the GCV of the fuel combusted in Boilers 1 and 2, USS performed a demonstration, using an on-line gas chromatograph (GC). USS collected 1511 hours of GCV data for Boiler 1 and 1232 hours of data for Boiler 2, in the time period extending from March 1, 2002 through May 2, 2002. USS also used the GC to concurrently determine hourly values of F_d , the oxygen-based F-factor for the fuel.

The hourly GCV values obtained in the demonstration ranged from 448 to 614 Btu/scf,

averaging 544 Btu/scf for Boiler 1 and 515 Btu/scf for Boiler 2. The hourly F_d values ranged from 7421 to 8265 scf/mmBtu, averaging 7858 scf/mmBtu for Boiler 1 and 7768 scf/mmBtu for Boiler 2.

USS also performed a statistical analysis of the GCV and F_d data, according to the criterion in section 2.3.5 of Appendix D. Both the GCV and the F_d were found to have low variabilities, based on the statistical analysis.

Since the fuel has a low GCV variability, the fuel qualifies under section 2.3.5 of Appendix D for monthly GCV sampling, rather than daily sampling. Despite this, the May 3, 2002 letter indicates that USS intends to continue to use the gas chromatograph to determine the GCV of the fuel hourly, for the purpose of calculating the hourly heat input to the boilers. USS also intends to keep using the GC to obtain hourly F_d values, for the purposes of calculating hourly NO_x emission rates. The only time that hourly GCV and F_d values will not be available for these calculations is when the GC is in the maintenance mode. According to USS, these times are relatively rare.

In the May 3, 2002 petition, USS requested to use the mean GCV and F_d values obtained in the March 1-May 2, 2002 demonstration for missing data purposes, whenever the GC is in the maintenance mode. USS noted that the prescribed Appendix D missing data value for GCV is 2100 Btu/scf, which is outside the range of GCV values observed in the demonstration (i.e., 448 to 614 Btu/scf). USS also noted that Part 75 does not provide any missing data procedures for F-factors.

EPA's Determination

EPA reviewed the summarized GCV and F_d data provided by USS in the May 3, 2002 petition. Based on this review, the Agency concludes that the missing data values proposed by USS are reasonable for maintenance outages of the on-line gas chromatograph. Clearly, the Appendix D missing data value of 2100 Btu/scf for GCV is too high for the fuel mixture combusted in Boilers 1 and 2, as the highest GCV observed in more than 2700 hourly determinations for the two units was 614 Btu/scf. Also, since the fuel has been shown to have a low variability for both GCV and F_d , it is reasonable to use the mean values of these quantities for missing data substitution. EPA therefore approves the petition, with the following conditions:

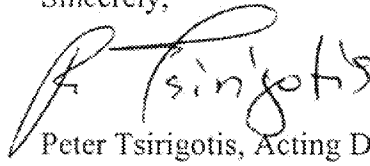
- (1) During maintenance outages of the gas chromatograph, USS shall report the higher of the two GCV and F_d mean values obtained in the demonstration, for both Boilers 1 and 2. That is, for both boilers, USS shall use 544 Btu/scf as the substitute data value for GCV and 7858 scf/mmBtu as the substitute data value for F_d .
- (2) In the event that an outage of the gas chromatograph is so extensive that valid values of the GCV and F_d are not obtained for an entire calendar month, USS shall report the maximum potential GCV and F_d values for that month, and shall continue reporting the maximum potential values for each subsequent operating

hour until valid GCV and F_d values are obtained. Based on the demonstration data provided by USS in the May 3, 2002 letter, EPA concludes that the maximum potential GCV and F_d values for the fuel are, respectively, 614 Btu/scf and 8265 scf/mmBtu.

- (3) If the fuel combusted in Boiler 1 or Boiler 2 is modified in any way that could potentially increase the average or maximum potential GCV or F_d values for such fuel, USS shall notify EPA and the Pennsylvania Department of the Environment within 90 days of such modification.

EPA's approval of USS's petition under § 75.66 (a) relies on the accuracy and completeness of the information in the May 3, 2002 petition and is appealable under Part 78. If you have any questions or concerns about this matter, please contact Robert Vollaro of my staff at (202) 564-9116. Thank you for your continued cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read "P. Tsirigotis".

Peter Tsirigotis, Acting Director
Clean Air Markets Division

cc: ✓ Renee McLaughlin, EPA Region III
Joseph Nazzaro, Pennsylvania DEP
Robert Vollaro, EPA, CAMD